

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 March 2004 (04.03.2004)

PCT

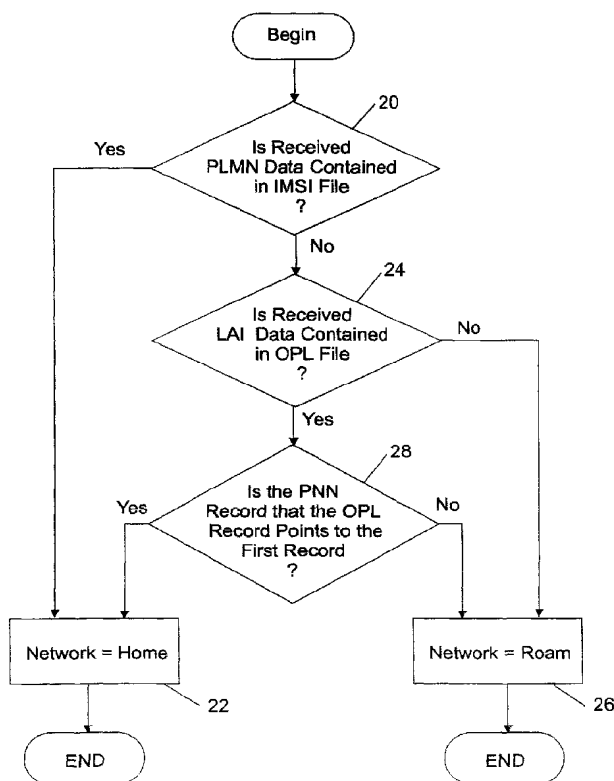
(10) International Publication Number
WO 2004/019638 A3

- (51) International Patent Classification⁷: **H04Q 7/38**
- (21) International Application Number:
PCT/US2003/026030
- (22) International Filing Date: 20 August 2003 (20.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/405,629 23 August 2002 (23.08.2002) US
10/065,253 30 September 2002 (30.09.2002) US
- (71) Applicant (for all designated States except US): **SONY ERICSSON MOBILE COMMUNICATIONS AB** [SE/SE]; Nya Vattentornet, S-S-221 88 Lund (SE).
- (71) Applicant and
(72) Inventor: **HICKS, Scott, Gordon** [US/US]; 1316 Red Twig Road, Apex, NC 27502 (US).

- (72) Inventors; and
(75) Inventors/Applicants (for US only): **MULLIS, Samuel, Z. II** [US/US]; 2400 Castelburg Drive, Apex, NC 27502 (US). **JARRAD, Bassam** [US/US]; 2114 Oak Stream Lane, Apex, NC 27502 (US).
- (74) Agent: **STEPHENS, Gregory, A.**; 2200 West Main Street, Suite 800, Durham, NC 27705 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR HOME NETWORK DETERMINATION IN A MOBILE PHONE



(57) Abstract: A system and method for determining if a mobile phone is in a home area that does not rely exclusively on the HPLMN data programmed into the mobile phone. To determine whether the mobile phone is in a home area or in a roaming area a processor in the mobile phone checks the PLMN control information in an over-the-air received signal. If the PLMN data matches the PLMN data stored in the mobile phone SIM card IMSI file, then the current network is a home network. Otherwise, the received LAI control data is checked to see whether it matches any LAI data in the OPL file of the SIM card in the mobile phone. If the received LAI data does not match any LAI data in the OPL file, then the network is not a home network but a roamed into network. If the received LAI data does match LAI data in the OPL file, then the OPL file is further examined to see whether the PNN record that the OPL record points to is the first record in the PNN file. If it is, then the network is a home network. If it is not, then the network is a roamed into network.



SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

22 April 2004

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/26030

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04Q7/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 734 980 A (HOOPER JEFF DUWAYNE ET AL) 31 March 1998 (1998-03-31) abstract; figure 3 column 12, line 57 -column 13, line 16 ----	1,5-7, 13,19
Y	WO 99 11085 A (NOKIA MOBILE PHONES LTD ;HALTIA JUHA (FI); ALI VEHMAS TIMO (FI); J) 4 March 1999 (1999-03-04) abstract; claims 1-3,7; figures 2,4 page 4, line 9 - line 21 ----- -/-	1,5-7, 13,19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

16 February 2004

Date of mailing of the international search report

02/03/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Danielidis, S

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/26030

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ETSI: "Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module-Mobile Equipment (SIM-ME) interface (3GPP TS 51.011 version 4.4.0 Release 4)" ETSI TS 151 011 V4.4.0 (2002-06), June 2002 (2002-06), pages 1-162, XP002270376 France page 58, paragraph 10.3.30 page 62, paragraph 10.3.35 -page 64, paragraph 10.3.38 page 66, paragraph 10.3.41 -page 68, paragraph 10.3.43 -----	1,7,13, 19
A	US 2002/082049 A1 (PRISE MICHAEL EDWARD) 27 June 2002 (2002-06-27) abstract; figure 5 page 2, paragraph 28 -page 3, paragraph 32 -----	1-24

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/26030

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5734980	A	31-03-1998	NONE	
WO 9911085	A	04-03-1999	FI 973456 A AU 8864998 A CN 1268278 T DE 69815023 D1 EP 0915631 A2 WO 9911085 A1 JP 2001514475 T US 6526267 B1	23-02-1999 16-03-1999 27-09-2000 03-07-2003 12-05-1999 04-03-1999 11-09-2001 25-02-2003
US 2002082049	A1	27-06-2002	NONE	